CLAIMS

1. A process for the manufacture of a hydrogen storage material, the process comprising comminuting a source of magnesium under a reducing atmosphere for a time sufficient to produce particles of a required particle size and crystallite size, and introducing at least one reducible PGM compound; wherein the at least one PGM compound is substantially reduced during comminution, and distributed substantially at the surface of the particles.

2. A process according to claim 1, wherein the reducing atmosphere comprises hydrogen.

3. A process according to claim 1 or claim 2, wherein the source of magnesium comprises magnesium metal, magnesium hydride or an alloy or intermetallic compound, or hydrided alloy or hydrided intermetallic compound of magnesium with one or more other metals.

4. A process according to any preceding claim, wherein comminution is carried out using a ball mill.

5. A process according to any preceding claim, wherein the at least one reducible PGM compound is introduced towards the end of the comminution step.

6. A process according to any preceding claim, wherein the at least one reducible PGM compound comprises an oxide, a hydrated oxide, a halide or other salt, or any mixture thereof.

7. A process according to claim 6, wherein the at least one reducible PGM compound comprises PdO, $PdO.H_2O$, palladium black, ruthenium black or RuO_2.

8. A process according to any preceding claim, wherein the particles have an average particle size of less than 100μm.

9. A process according to any preceding claim, wherein the particles have an average crystallite size of less than 100nm.

10. A hydrogen storage material prepared by a process according to any preceding claim.